

10.3 Distribution

[0724] The use of the monitoring and communication system described above facilitates the use of a variety of utility distribution systems. For example, with reference to FIG. 30, an organization 30, such as a Government agency, non-governmental agency (NGO), or privately funded relief organization, a corporation, or a combination of these, could provide distributed utilities, such as safe drinking water or electricity, to a geographical or political area, such as an entire country. The organization 30 may then establish local distributors 31A, 31B, and 31C. These local distributors could preferably be a monitoring station 20 described above. In one possible arrangement, organization 30 could provide some number of generation devices 10 to the local distributor 31A, etc. In another possible arrangement, the organization 30 could sell, loan, or make other financial arrangements for the distribution of the generation devices 10. The local distributor 31A, etc. could then either give these generation devices to operators 32A, 32B, etc., or provide the generation devices 10 to the operators through some type of financial arrangement, such as a sale or micro-loan.

[0725] The operator 32 could then provide distributed utilities to a village center, school, hospital, or other group at or near the point of water access. In one preferred embodiment, when the generation device 10 is provided to the operator 32 by means of a micro-loan, the operator 32 could charge the end users on a per-unit basis, such as per watt hour in the case of electricity or per liter in the case of purified water. Either the local distributor 31 or the organization 30 may monitor usage and other parameters using one of the communication systems described above. The distributor 31 or the organization 30 could then recoup some of the cost of the generation device 10 or effect repayment of the micro-loan by charging the operator 32 for some portion of the per-unit charges, such as 50%. The communication systems described additionally may be used to deactivate the generation device 10 if the generation device is relocated outside of a pre-set area or if payments are not made in a timely manner. This type of a distribution system may allow the distribution of needed utilities across a significant area quickly, while then allowing for at least the partial recoupment of funds, which, for example, could then be used to develop a similar system in another area.

[0726] While the principles of the invention have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the invention. Other embodiments are contemplated within the scope of the present invention in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.

What is claimed is:

1. A water vending system comprising:
 - a water vapor distillation apparatus; and
 - a multi-purpose interface located outside the water vapor distillation apparatus, wherein the multi-purpose interface is in fluid communication with the water vapor distillation apparatus and wherein the multi-purpose interface comprising:
 - at least one dispensing device; and
 - at least one conductivity sensor;

wherein the multi-purpose interface dispenses water from the water vapor distillation apparatus onto the at least one conductivity sensor.

2. The water vending system of claim 1 wherein the dispensing device is in fluid communication with the water vapor distillation apparatus and whereby product water from the fluid vapor distillation apparatus is dispensed by the dispensing device.

3. The water vending system of claim 1 further comprising a programmable logic controller for controlling the dispensing device and the water vapor distillation apparatus.

4. The water vending system of claim 3 further comprising a proximity sensor wherein the proximity sensor sends a signal to the programmable logic controller to dispense water.

5. The water vending system of claim 4 wherein the proximity sensor sends a signal to the programmable logic controller to dispense water.

6. The water vending system of claim 1 wherein the water vapor distillation apparatus further comprising:

- a source water input;
- an evaporator condenser apparatus comprising:
 - a housing; and
 - a plurality of tubes in the housing,

whereby the source water input is fluidly connected to the evaporator condenser and the evaporator condenser transforms source water into steam and transforms compressed steam into product water;

- a heat exchanger fluidly connected to the source water input and a product water output, the heat exchanger comprising:

- an outer tube; and
- at least one inner tube; and

- a regenerative blower fluidly connected to the evaporator condenser, whereby the regenerative blower compresses steam, and whereby the compressed steam flows to the evaporative condenser where compressed steam is transformed into product water.

7. The water vending system of claim 1 further comprising a primary tank and a secondary tank.

8. The water vending system of claim 7 further comprising a fill pump wherein the fill pump pumps water from the primary tank to the secondary tank.

9. The water vending system of claim 7 further comprising a diffuser in the secondary tank.

10. The water vending system of claim 7 further comprising at least one sensor.

11. The water vending system of claim 10 further comprising a minimum volume sensor in the primary tank whereby the minimum volume sensor determines whether the primary tank is holding a minimum volume to fill the secondary tank.

12. The water vending system of claim 10 further comprising a maximum volume sensor in the primary tank whereby the maximum volume sensor determines whether the primary tank is full.

13. The water vending system of claim 7 further comprising an air flow conduit between the primary tank and the secondary tank.

14. The water vending system of claim 7 further comprising an ultraviolet sterilizer coupled to a fluid path between the primary tank and the secondary tank.